



Armed Forces College of Medicine

Anatomy departement



Nerves of the hand

INTENDED LEARNING OBJECTIVES (ILO)



1. Describe course, main relations and distribution of ulnar, median and radial nerves in hand
2. State the course and branches of radial and ulnar arteries in hand

Nerves of palm of the hand



I. Median Nerve

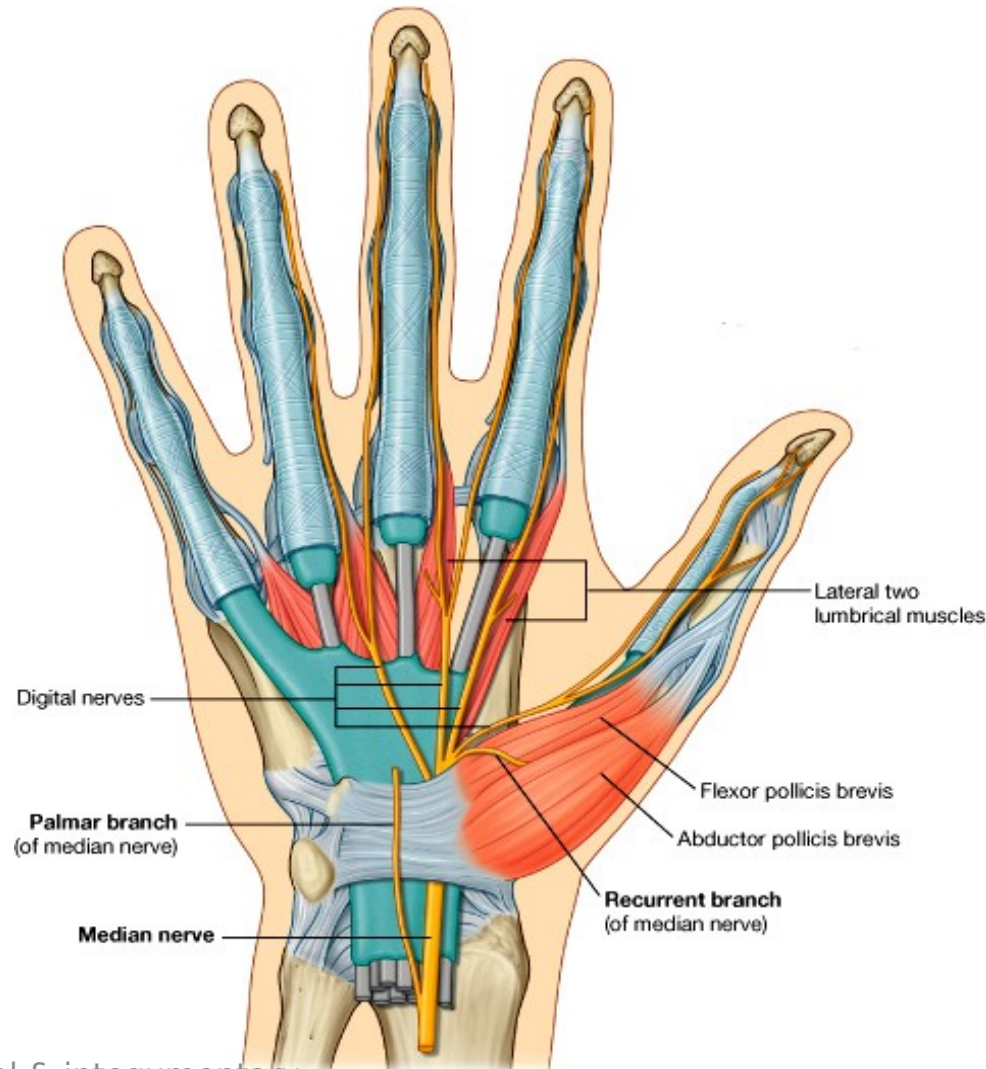
II. Ulnar Nerve

III. Radial nerve

I. Median Nerve



- It enters the palm by passing deep to the flexor retinaculum through the carpal tunnel.
- At first, it lies between the retinaculum & ulnar bursa and then, in the palm, it lies deep to the superficial palmar arch.
- It ends by dividing

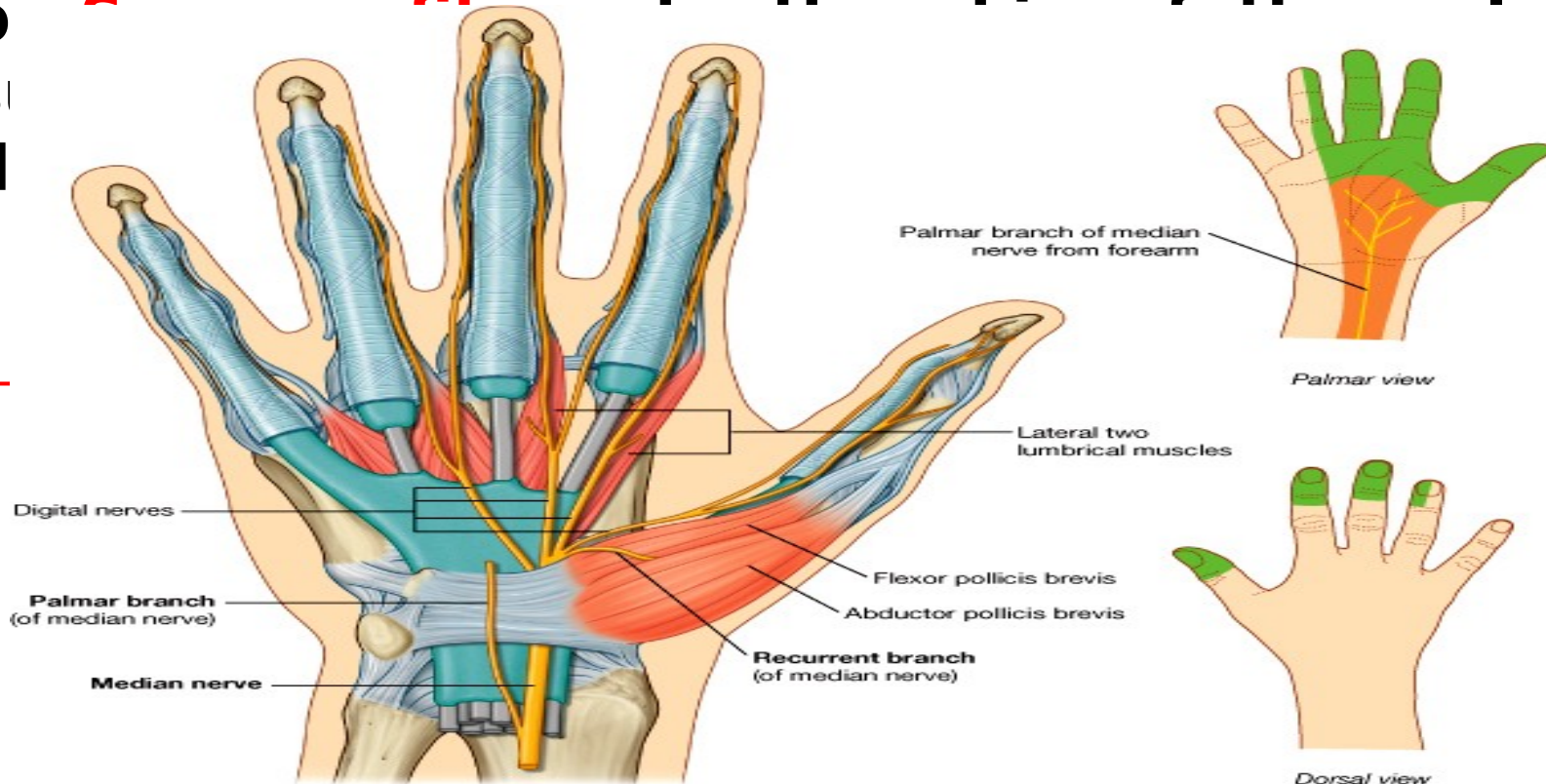


♣ **To summarize:** In the hand, Median nerve, supplies:

a. **Motor fibers** to 5 muscles: 3 muscles of thenar eminence + 1st & 2nd lumbricals (L1 & L2).

b
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d

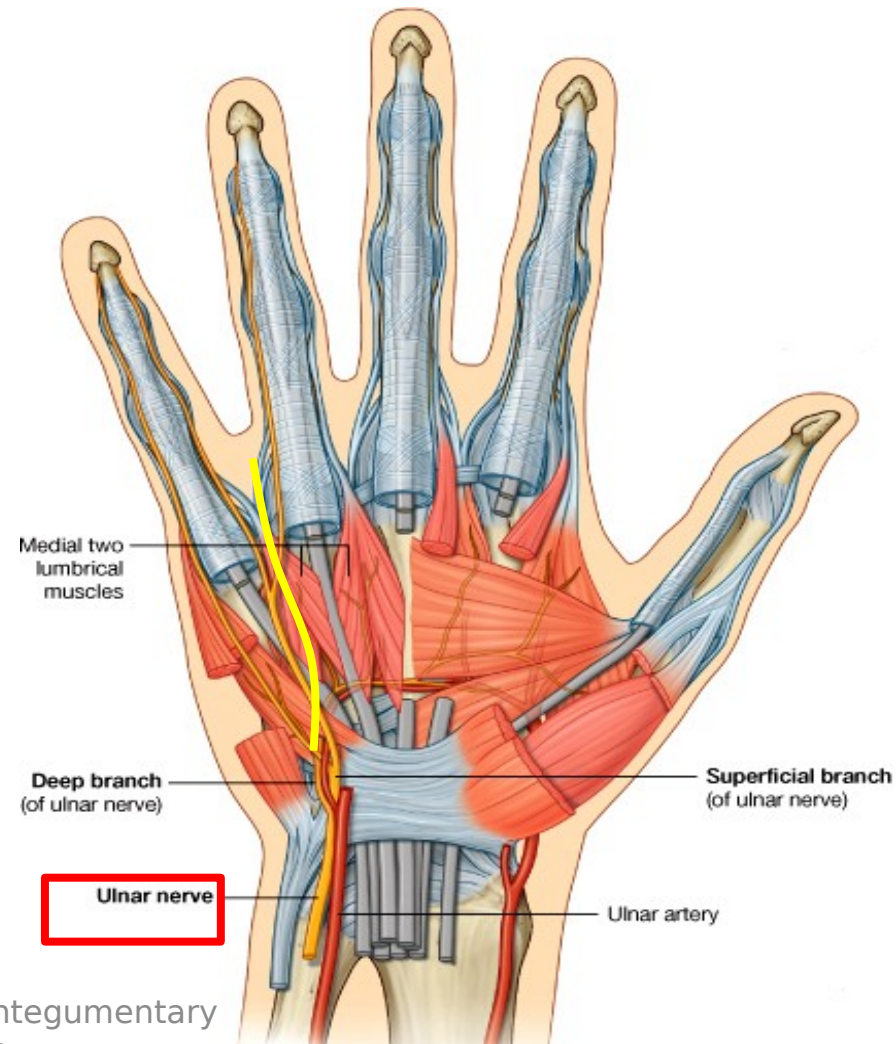
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II. Ulnar Nerve



- ✓ It enters the palm
- ✓ **Superficial to the flexor retinaculum**
- ✓ **medial to the ulnar artery.**
- ✓ It ends by dividing into superficial & deep terminal branches
- ✓ **Most important nerve in the hand**



Ulnar Nerve :

In the hand, Ulnar nerve supplies:

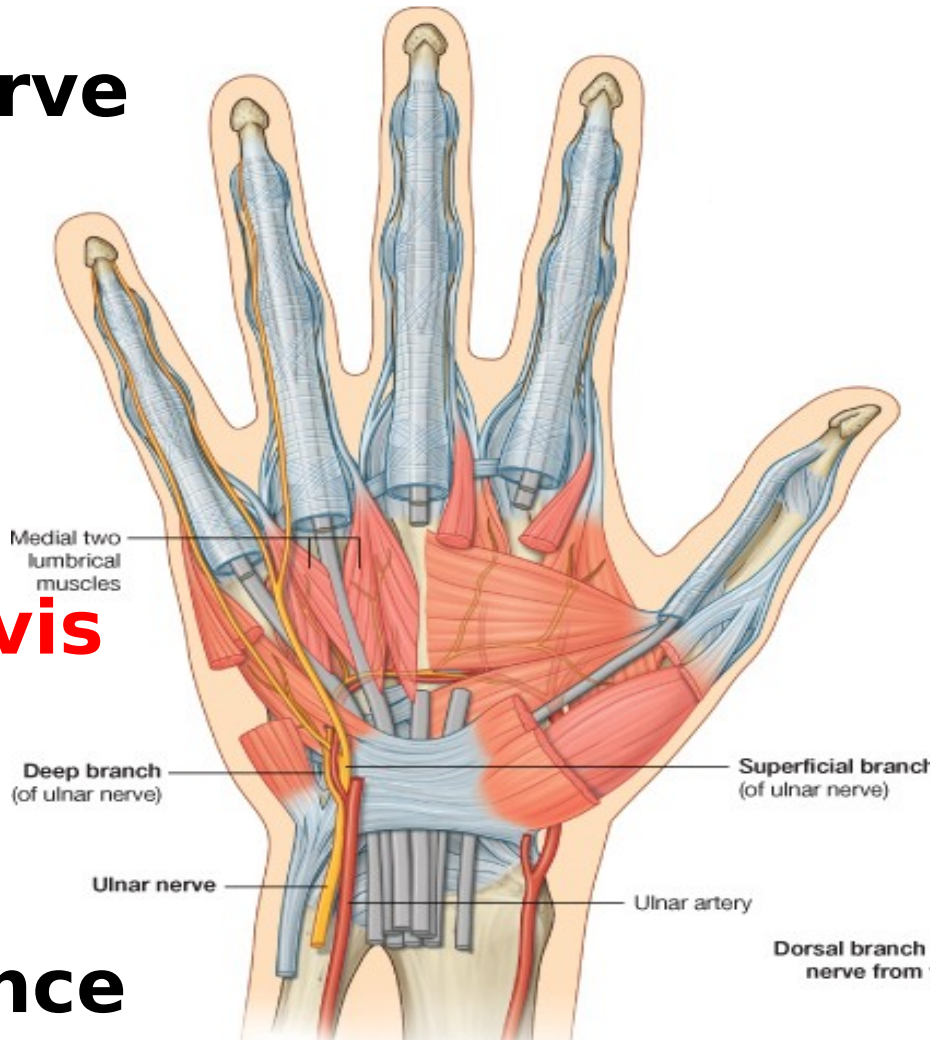
❑ Motor fibers to 15 muscles:

✓ 1 by superficial branch **palmaris brevis**

✓ 14 by deep branch.

- Adductor pollicis.
- hypothenar eminence
- Medial 2 lumbricals (L3 & L4).

▪ All interossei

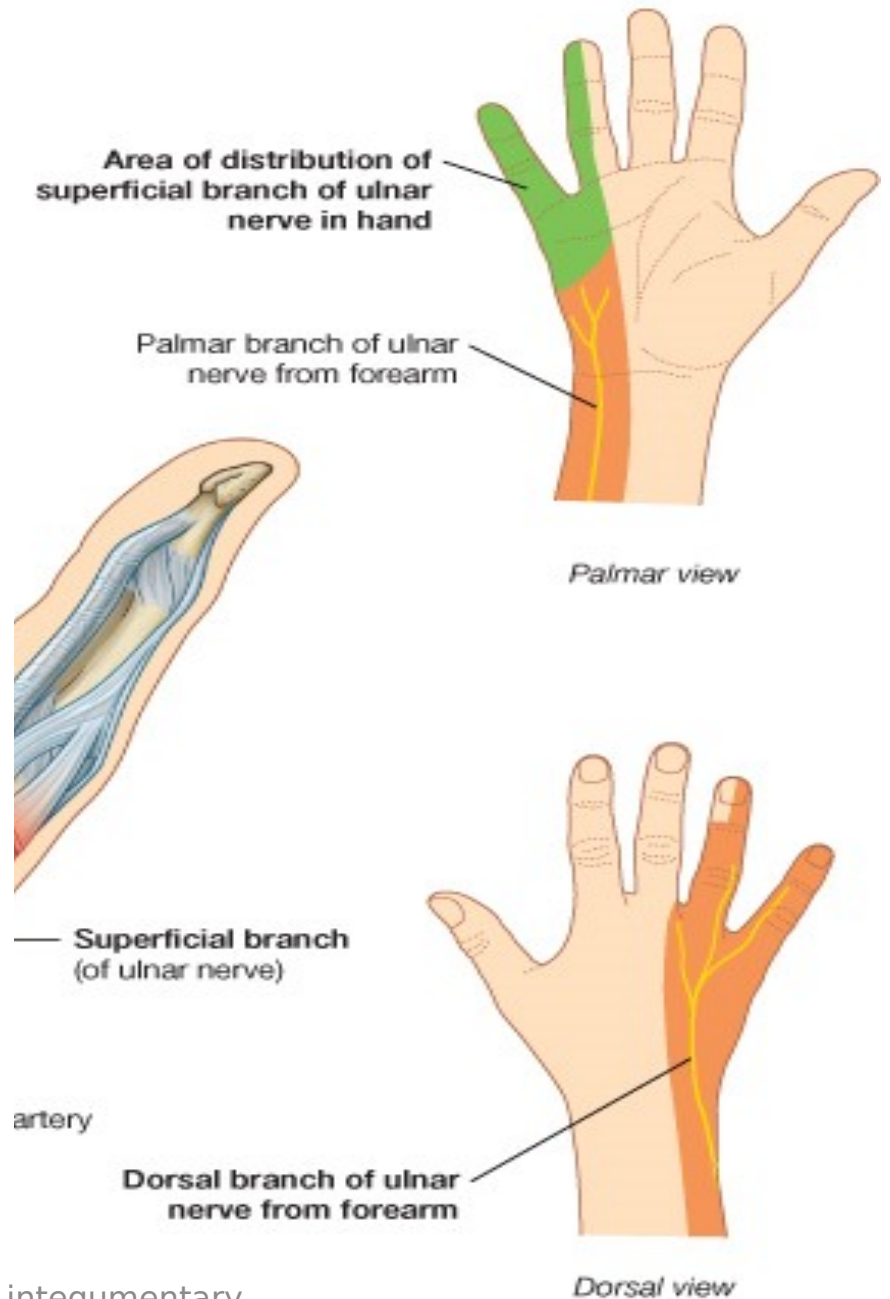


Ulnar Nerve

□ Sensory fibers

to the skin of the palmar surface of the medial 1½ fingers and the dorsum of their terminal & middle phalanges.

Note: branch of ulnar nerves that supply skin of medial 1 ½ of palm and dorsum of hand are arised in the forearm



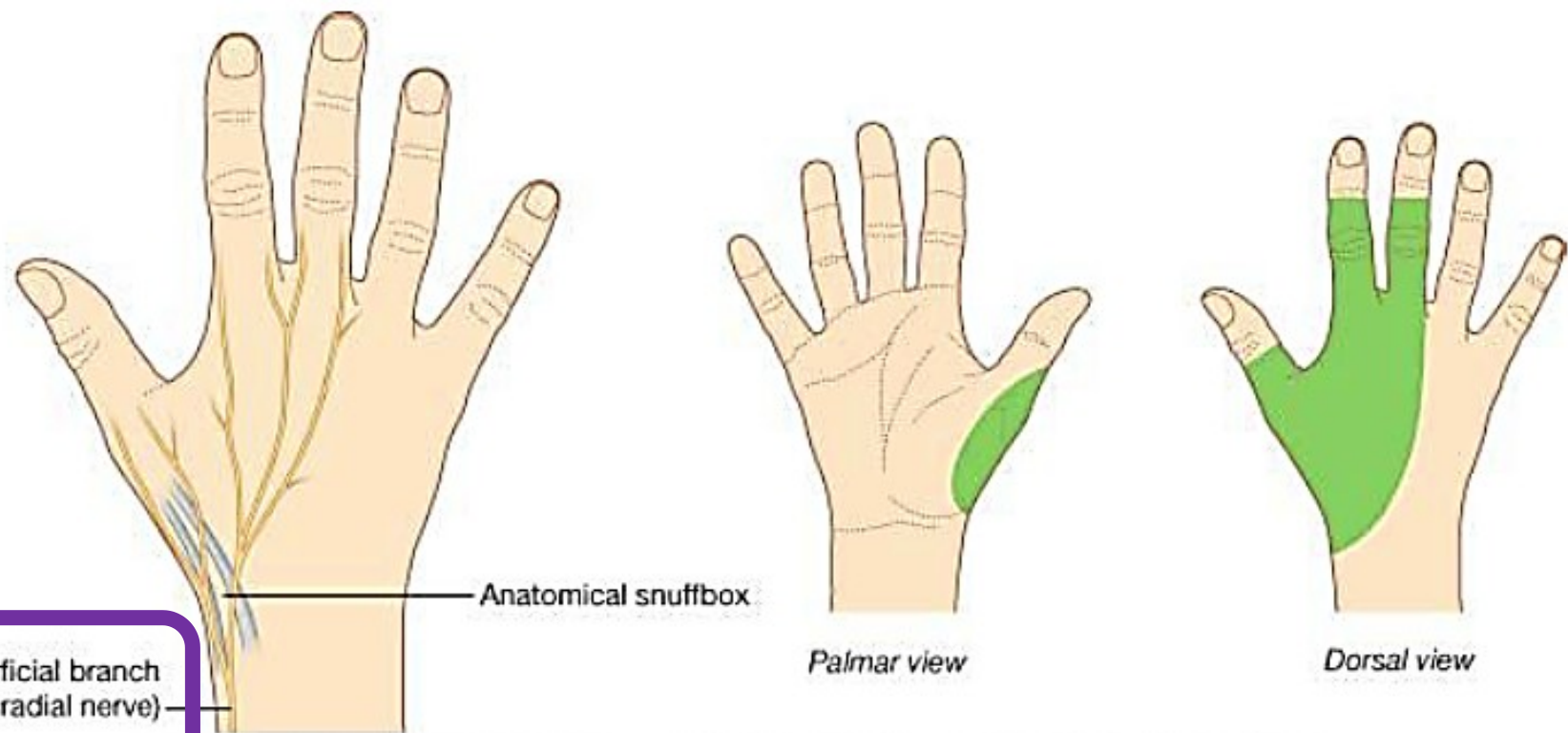
Ulnar Nerve

♣ **To summarize:** In the hand, Ulnar nerve, supplies:

a. **Motor fibers** to 15 muscles: 1 by superficial branch & 14 by deep branch.

b. **Sensory fibers** to the skin of the palmar surface of the medial 1½ fingers and the dorsum of their terminal & middle phalanges.

III. Radial nerve



Superficial branch
(of radial nerve)

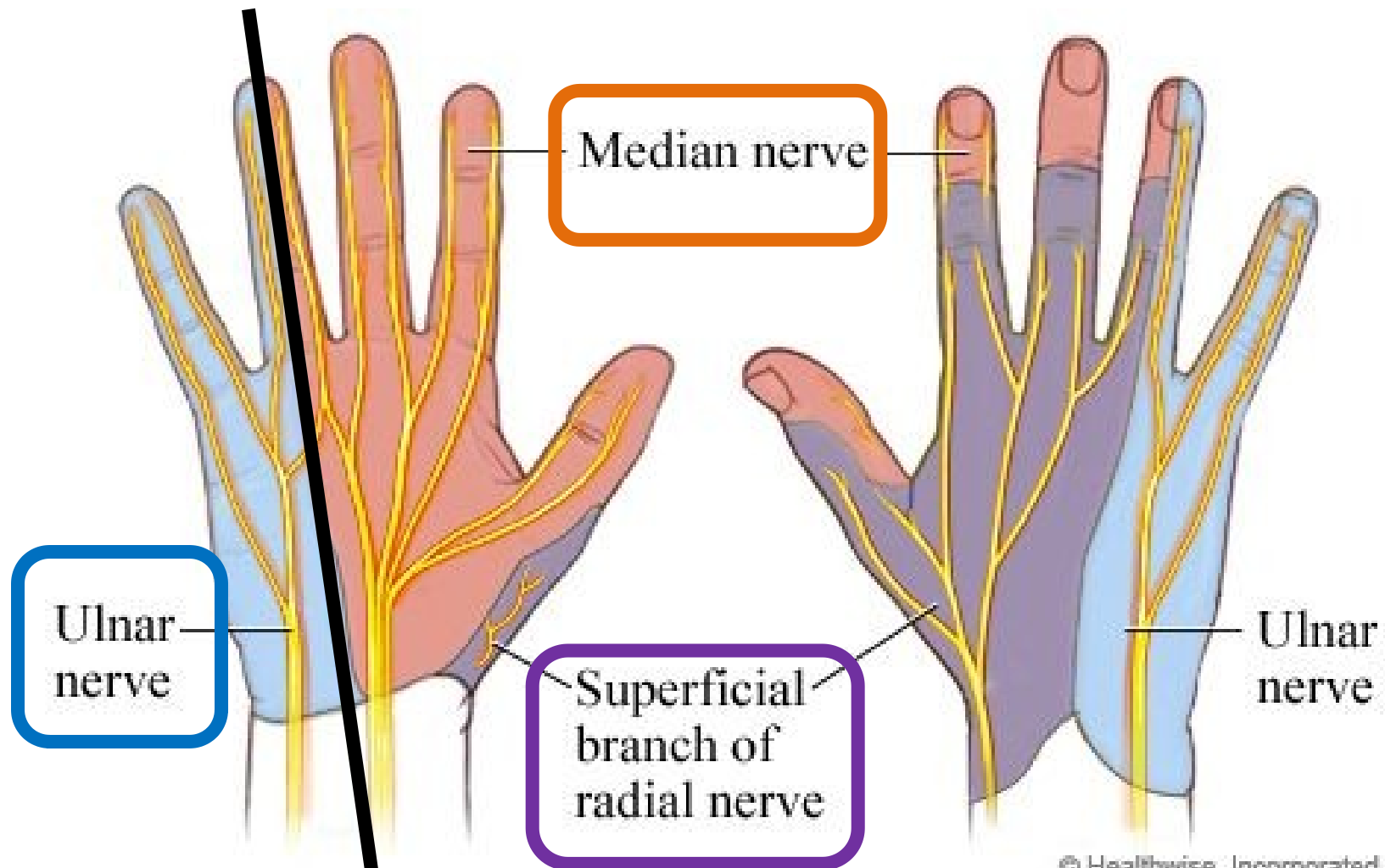
Anatomical snuffbox

Palmar view

Dorsal view

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utaneous nerve supply of the hand



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cutaneous nerve supply of the hand

median nerve

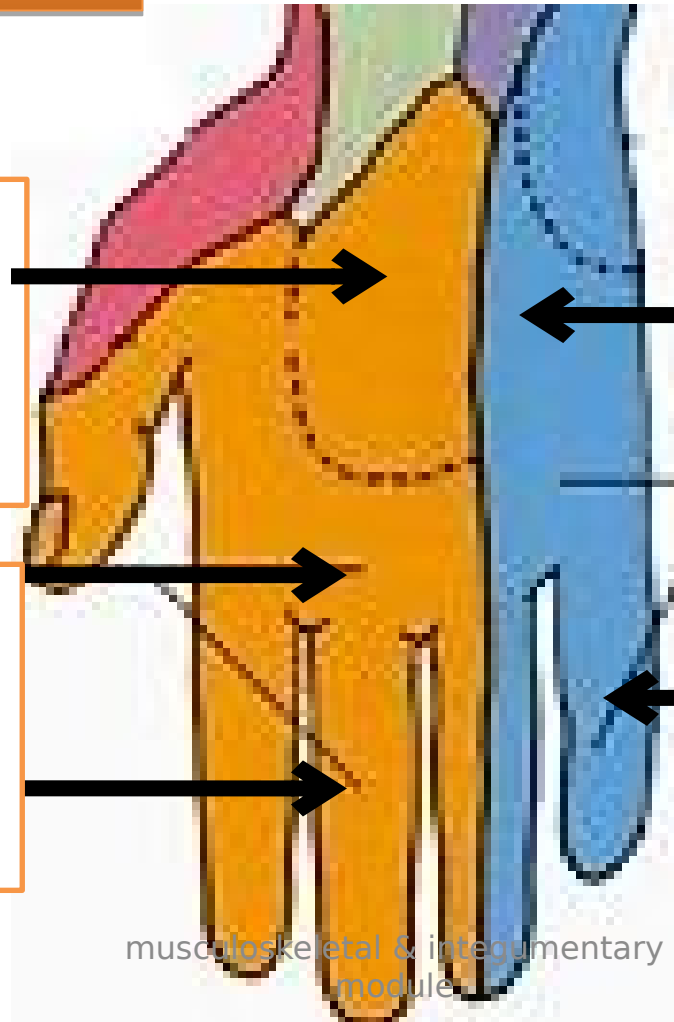
ulnar nerve

palmar cutaneous branch of median n.

palmar digital branches of the median nerve.

palmar cutaneous branch of ulnar n.

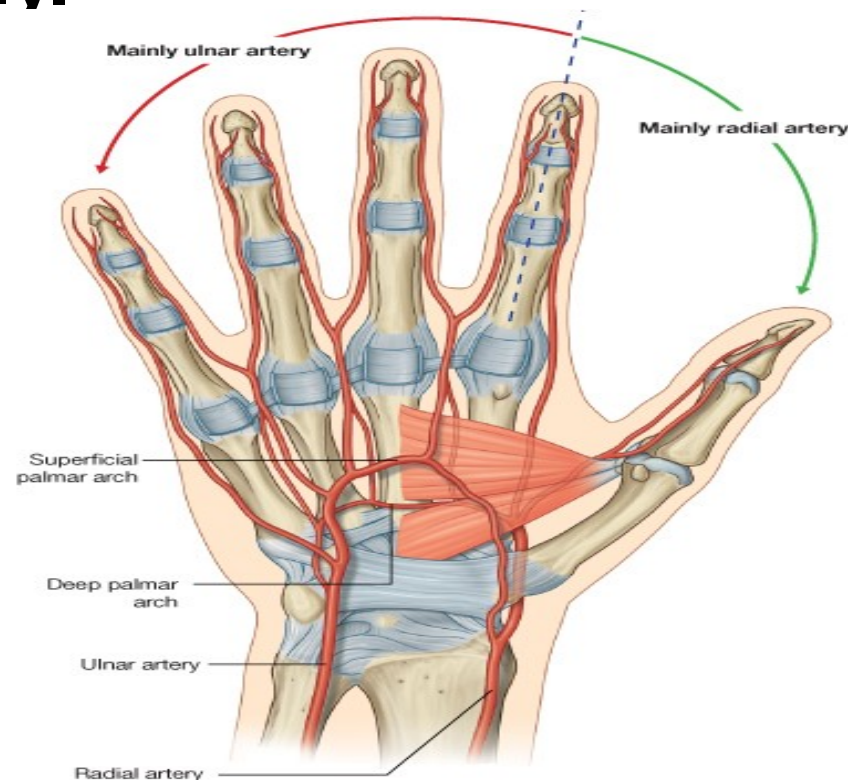
superficial terminal branch of ulnar n.



Arteries of palm of the hand



◆These are the terminations of the ulnar & radial arteries which form 2 arches in the palm; the **superficial** & **deep palmar** arches respectively.



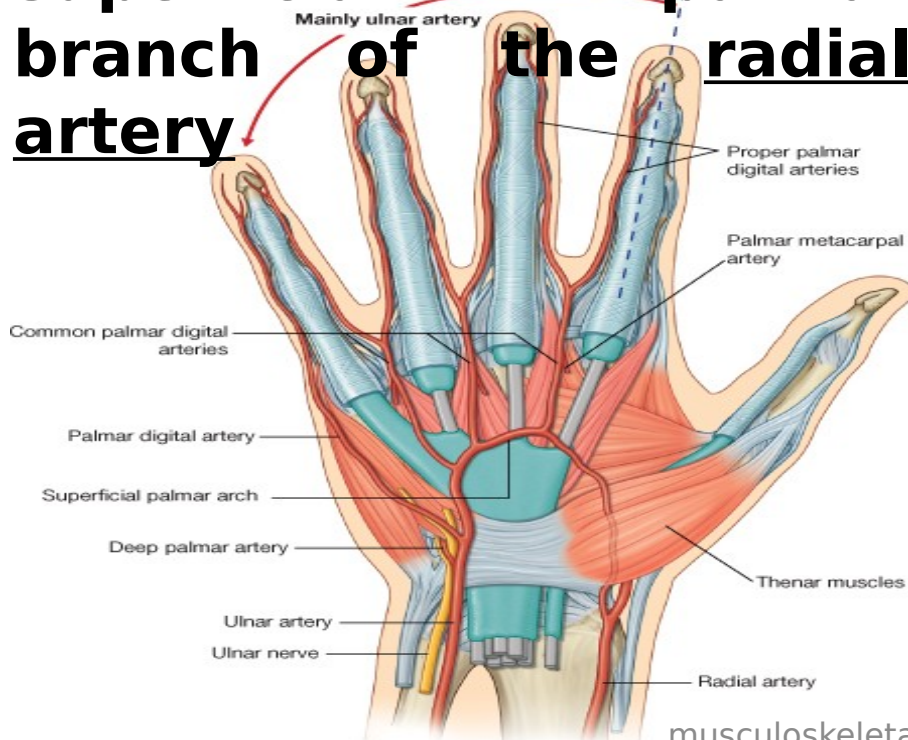
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Arteries of palm of the hand



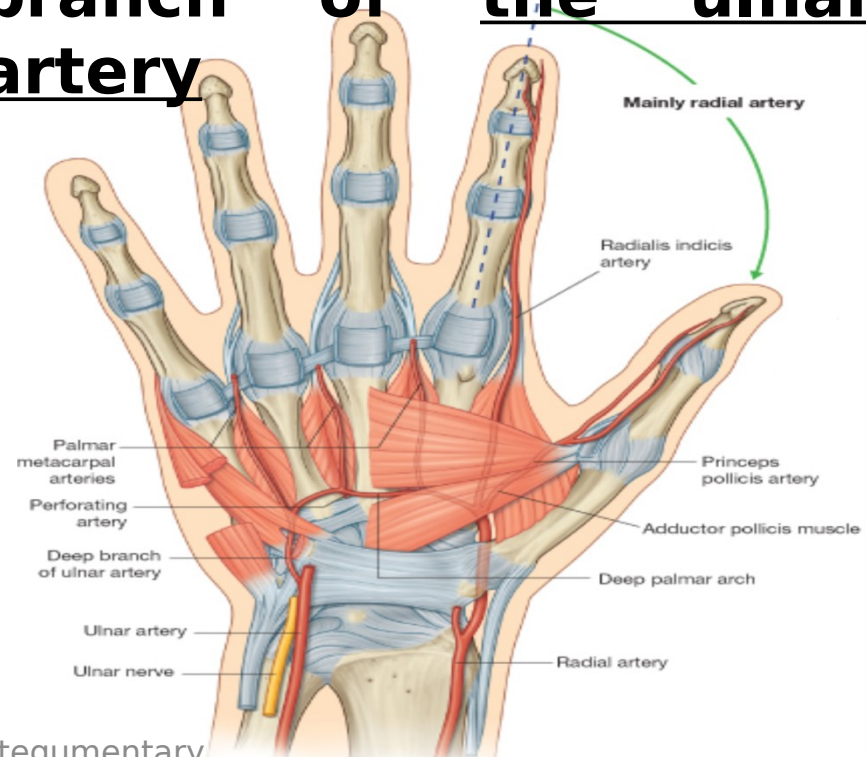
Superficial palmar arch

It is the termination of the ulnar artery and is completed by the superficial branch of the radial artery



Deep palmar arch

It is the termination of the radial artery and is completed by the deep branch of the ulnar artery



I. Ulnar Artery



.It enters the palm **superficial to** the flexor retinaculum

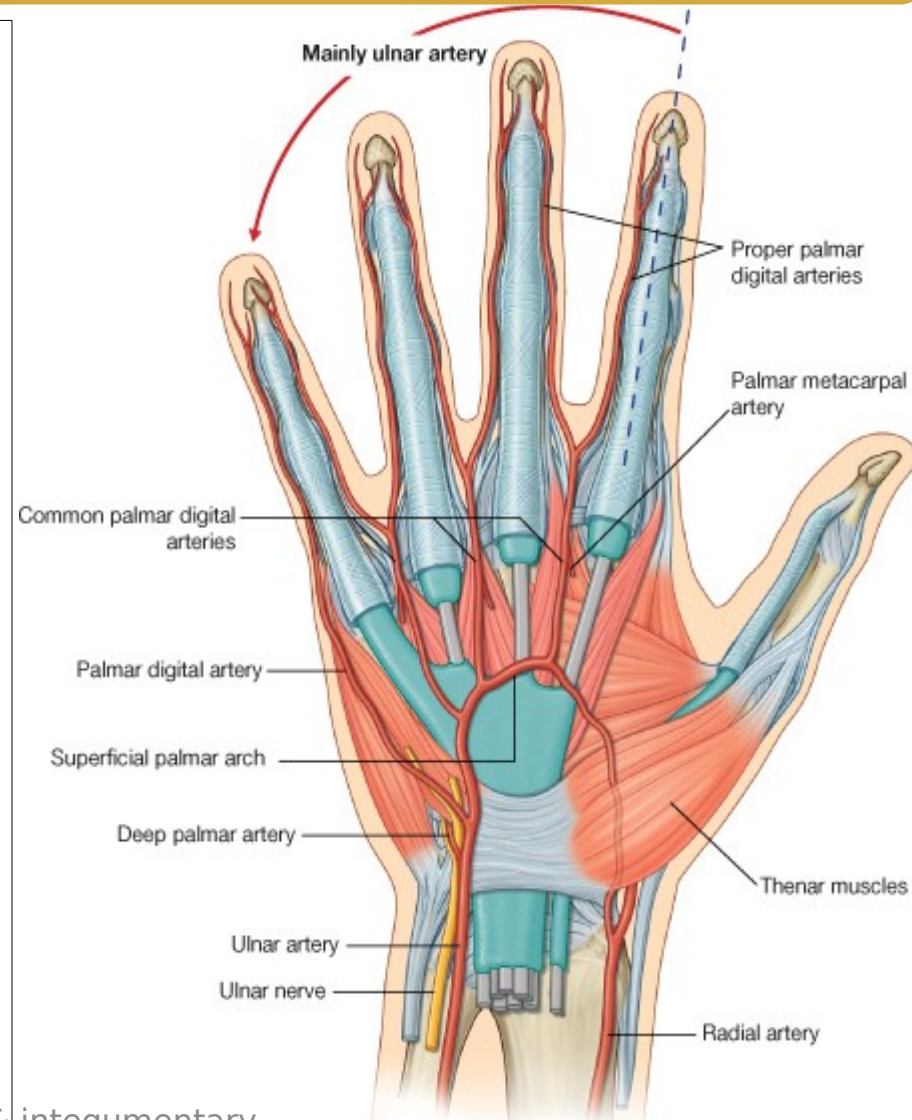
.The ulnar artery gives off the **deep branch**.

Then, it **curves laterally** across the palm forming the

□ superficial palmar arch

with its convexity directed distally.

.The deep branch passes **between** the **abductor**

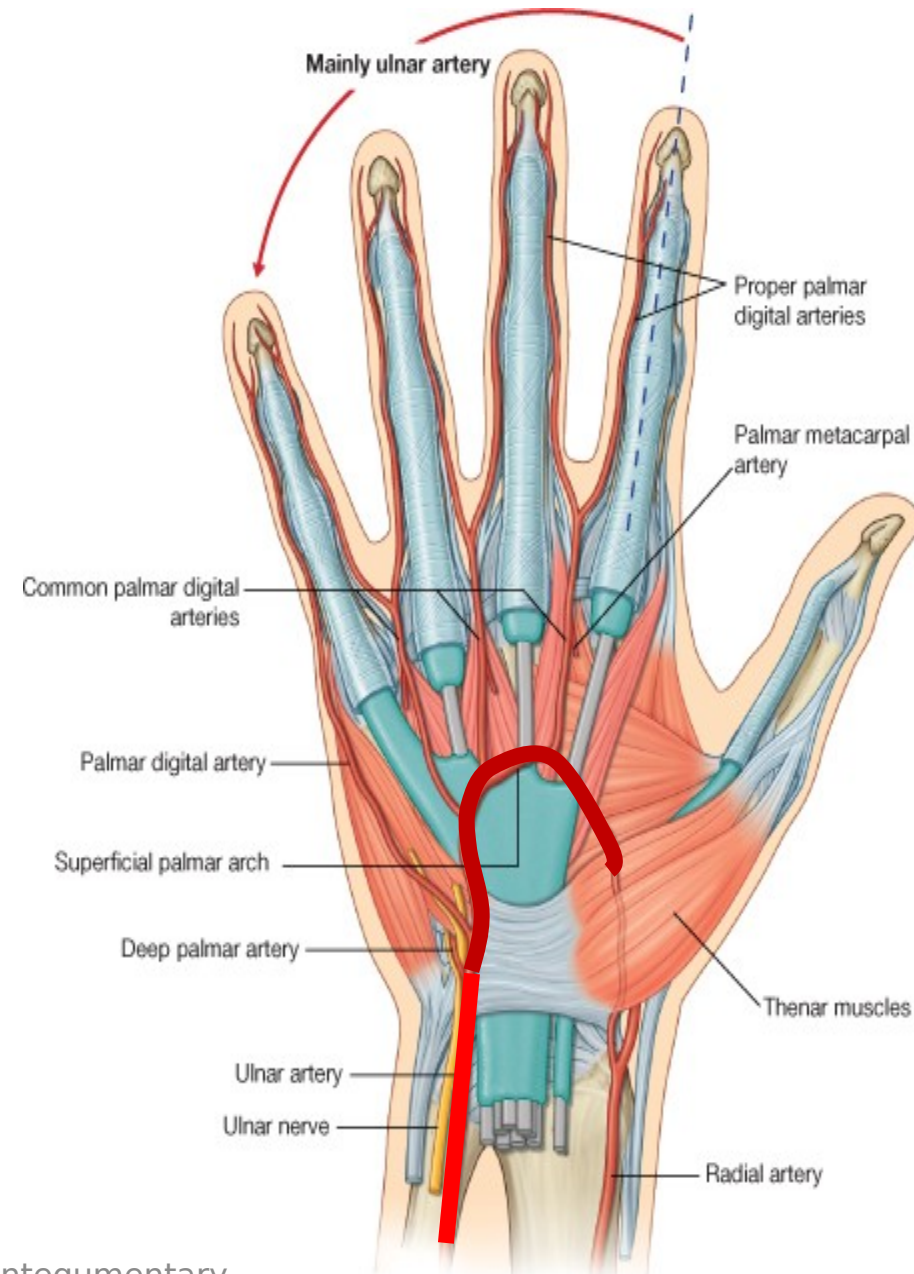


Superficial palmar arch:

.It is the termination of the ulnar artery and is completed by the superficial branch of the radial artery.

.**Branches:**

1. 3 common palmar digital arteries
2. Palmar digital artery to the medial side of the little finger.



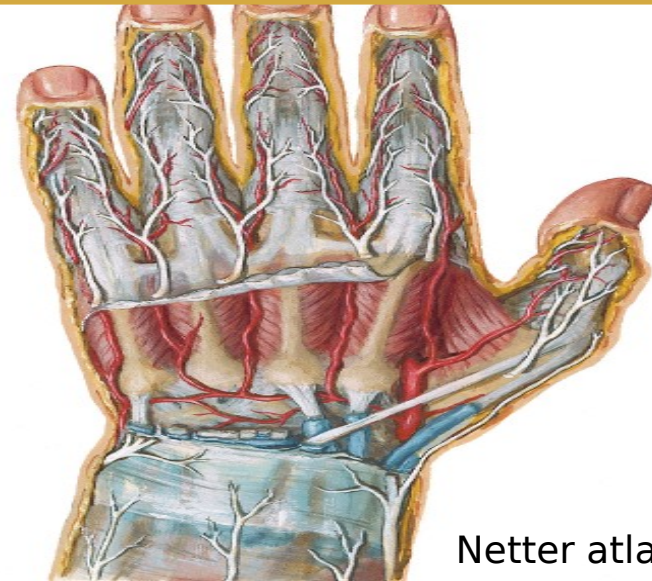
II. Radial Artery



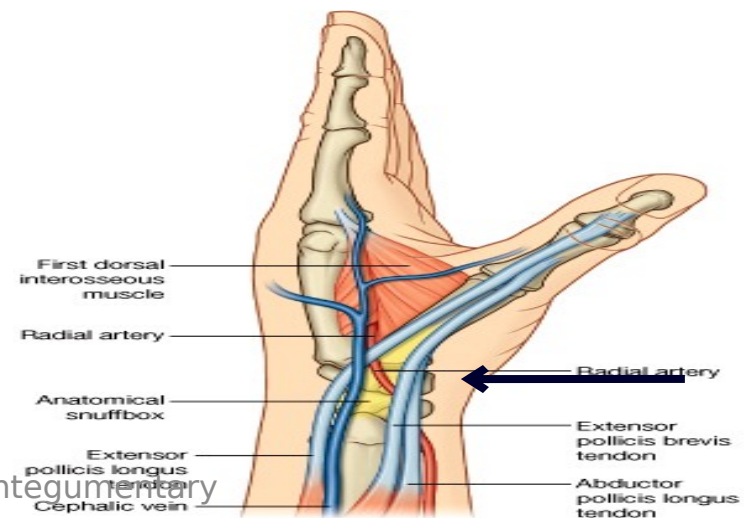
.It leaves the anatomical snuff box to enter the palm by passing between the 2 heads of the **1st dorsal interosseous** muscle and then between the 2 heads of **adductor pollicis** (oblique & transverse heads).

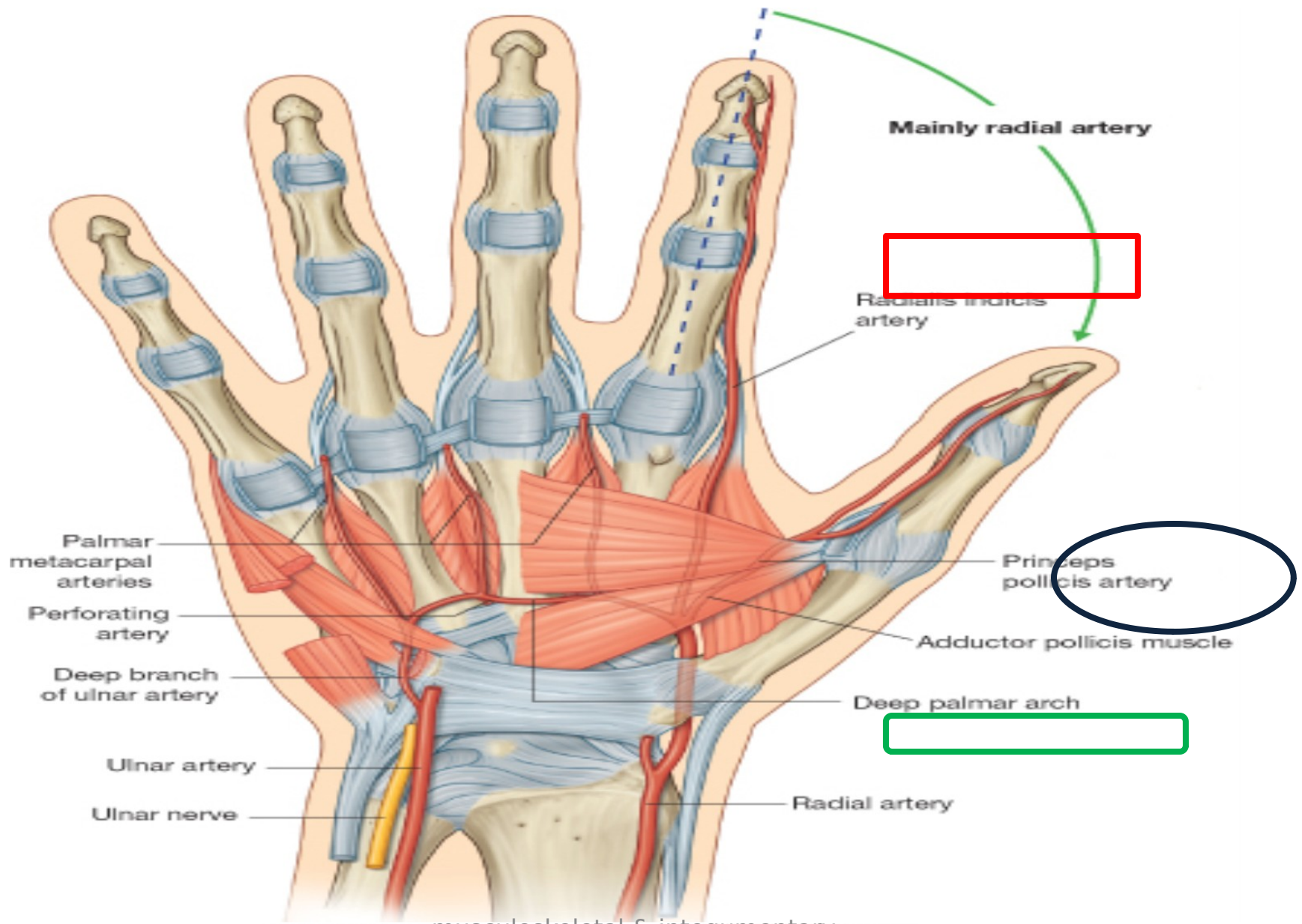
.It gives 2 branches in the palm.

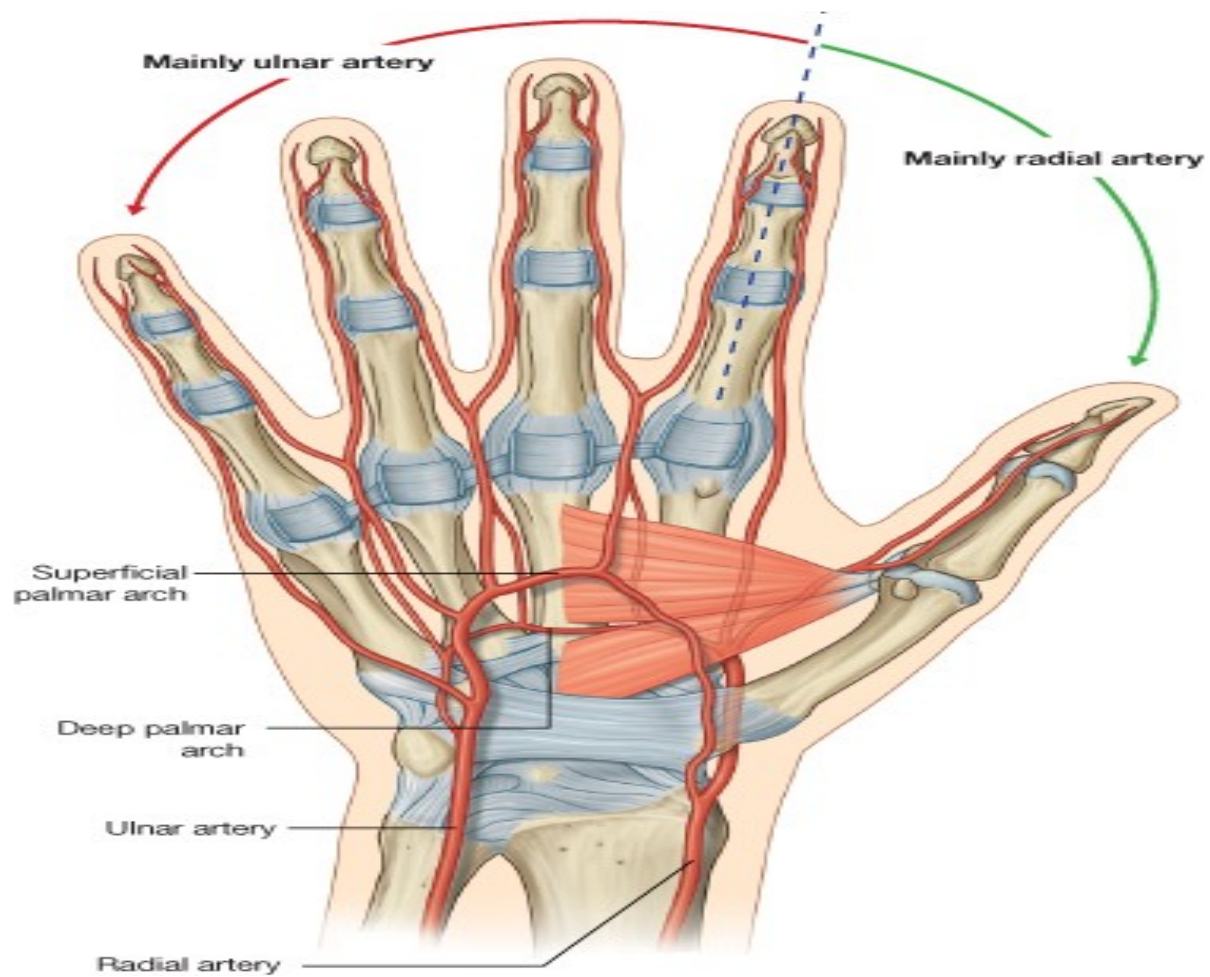
.Then, it runs medially across the bases of the



Netter atlas of Anatomy







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■ Branches of radial artery in the palm:

1. **Princeps pollicis artery:**

2. **Radialis indicis artery:**

Deep palmar arch:

.It is the termination of the radial artery and is completed at the base of the 5th metacarpal bone by the **deep branch of the ulnar artery.**

3 palmar metacarpal As

3 proximal perforating As

Recurrent branches → Join the anterior (palmar) carpal arch.

Lecture Quiz



- a) Describe formation of palmar arches
- b) Describe sensory innervation of the hand

SUGGESTED TEXTBOOKS



Clinical Anatomy by Regions, 9th edition,
2011, Snell RS, Lippincott, Williams and
Wilkins

Atlas of Human Anatomy, 6th edition,
2014, Netter F.H.

Gray's Anatomy for students, 2nd edition,
2011, Drake R. et al, Churchill & Livingstone

Thank You

The image features the words "Thank You" in a stylized, hand-drawn font. The letters are filled with a brown, textured pattern. The word "Thank" is in a cursive-like script, while "You" is in a more upright, blocky style. The text is surrounded by several spiral patterns in brown and yellow, scattered across the white background.